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EXAMINER	
LAROSE, COLIN M	

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DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/895,429	Applicant(s) WANG ET AL.	
	Examiner Colin M. LaRose	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 March 2006 has been entered.

Response to Amendments and Arguments

2. Applicant's amendment to claim 1 overcomes the previous 102 rejection in view of Wilcox. Regarding claim 1, Examiner agrees that Wilcox is concerned with only text and does not disclose accessing both "text class" strokes and "drawing class" strokes. However, a new ground of rejection appears below for claim 1.

3. Applicant's amendments to claims 21 and 34 are sufficient to overcome the previous 102 rejections in view of Altman. Regarding claims 21 and 34, Examiner agrees that Altman teaches determining the class of the stroke as either "text" of "drawing" based on the location of the stroke, as shown in figure 2B. However, if the stroke is (1) not in a text region 50, (2) not in a drawing region 51, and (3) not longer than two lines 52, Altman performs "gesture recognition on the stroke" 53 to determine whether it falls in the "text" or "drawing" class. Altman's disclosure is not clear as to whether the "gesture recognition on the stroke" involves "an analysis of curvature features of the stroke."

However, U.S. Patent 6,304,674 by Cass et al. is relied upon below to cure such a deficiency in Altman.

4. Applicant's amendments to claims 6 and 15 are not sufficient to overcome the previous 102 rejections in view of Cass. Regarding claims 6 and 15, Cass teaches designating the class of the inputted stroke only during the training phase when the system is trained to recognize different classes of strokes. (The classes each refer to a particular shape, letter, number, etc.) During the recognition phase, the system attempts to recognize the class of an inputted stroke; therefore, the class is not predetermined via a "class switch." As shown in figure 7, a gesture is input, and its curvature features are used to train a Hidden Markov Model in order to determine the "subclass" of the stroke. The subclass directly corresponds to the class of the stroke (col. 8, lines 9-12), and the class of the stroke identifies whether the stroke falls within the broader "text class" or "drawing class."

Drawings

5. The replacement sheets for figures 13 and 16 were received on 16 March 2006. These drawings are accepted.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

7. Claims 15-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 15-20 recite a "data structure" (stored on a computer-readable medium), which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se.

Rejections Under 35 U.S.C. § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 6-7, 12-16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cass et al. (U.S. Patent 6,304,674).

The following is in regard to Claim 6. Cass et al. disclose a method of digital ink recognition. The method includes the following steps:

Accessing a digital ink file (e.g. the *gesture source* - Cass et al. column 3, lines 36-37) having at least one stroke therein.

Extracting curvature features of each of the strokes for each class. See, for example, Cass et al. column 4, lines 3-8 and Fig. 2.

Based upon an analysis of the curvature features, determining whether the stroke is text (e.g. letters). See Cass et al. column 3, lines 45-50, in conjunction with column 4, lines 3-8.

Based upon an analysis of the curvature features, determining whether the stroke is a drawing (e.g. shapes). See Cass et al. column 3, lines 45-50, in conjunction with column 4, lines 3-8.

[As shown in figure 7, a gesture is input, and its curvature features are used to train a Hidden Markov Model in order to determine the "subclass" of the stroke. The subclass directly corresponds to the class of the stroke (col. 8, lines 9-12), and the class of the stroke identifies whether the stroke falls within the broader "text class" or "drawing class" (i.e. a letter or a shape).]

The following is in regard to Claim 7. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 6. Furthermore, in the method of Cass et al. recognition (i.e. determining whether the stroke is text, etc.) comprises evaluating the

stroke with a trainable classifier known as a Hidden Markov Model (HMM). See, for example, Cass et al. column 4, lines 9-11. In this way, the digital ink recognition method of Cass et al. sufficiently conforms to the method proposed by the Applicant in claim 7. Therefore, the teachings of Cass et al. anticipate the method of claim 7.

The following is in regard to Claim 12. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 6. The reader will note the similarity of the set of curvature features derived by Wilcox et al. with those (Cass et al. Fig. 2 and column 4, lines 3-8) of Cass et al. (they are identical). Therefore, taking into account the discussion above with regard to claim 4, for example, it should be clear that, in the method of digital ink recognition, the curvature features comprise the discreet curvature of the stroke. In this way, the digital ink recognition method of Cass et al. sufficiently conforms to the method proposed by the Applicant in claim 12. Therefore, the teachings of Cass et al. anticipate the method of claim 12.

The following is in regard to Claim 13. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 12. In a manner identical to Wilcox et al., Cass et al. determine the second derivative ($\delta^2\theta_n$) of the tangent angle at discrete intervals along the stroke (Cass et al. Fig. 2 and column 4, lines 3-8). Again, $\delta^2\theta_n$ is analogous to the tangent histogram described on pages 24-25 of the Applicant's disclosure. In this way, the digital ink recognition method of Cass et al. sufficiently conforms to the method proposed by the Applicant in claim 13. Therefore, the teachings of Cass et al. anticipate the method of claim 13.

The following is in regard to Claim 14. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 6. In a manner identical to Wilcox et al., Cass et al. determine the second derivative ($\delta^2\theta_n$) of the tangent angle at discrete intervals

along the stroke. Again, $\delta^2\theta_n$ is analogous to the tangent histogram described on pages 24-25 of the Applicant's disclosure. In this way, the digital ink recognition method of Cass et al. sufficiently conforms to the method proposed by the Applicant in claim 14. Therefore, the teachings of Cass et al. anticipate the method of claim 14.

The following is in regard to Claim 15. Cass et al. disclose a system of digital ink recognition. The system includes the following steps:

A first data field comprising data representing information regarding a plurality of classes of digital ink strokes, wherein the plurality of classes includes at least one text class and at least one drawing class. For example, gesture classes, such as gesture class 800 depicted in Cass et al. Fig. 8, represent such data fields. See column 3, lines 45-50: the gesture classes represent at least one text ("letter") class and at least one drawing ("shape") class.

A second data field comprising trained information regarding curvature features of each of the digital ink strokes. The HMMs consist of various parameters (e.g. A, β_n, and π – Cass et al. column 4, lines 34-39) that are adjusted during a training process. See Cass et al. column 5, lines 2-9 and Figs. 4 and 6. Thus, the HMM(s) (as defined by the aforementioned parameters) associated with the given gestures can be taken to represent a second data field comprising trained information regarding curvature features of each of the digital ink strokes.

The following is in regard to Claim 16. As shown above, Cass et al. disclose a system of digital ink recognition that conforms to the system of claim 15. As stated earlier, the HMM is a trainable classifier. Therefore, given the discussion above, the digital ink recognition system of

Cass et al. sufficiently conforms to the system proposed by the Applicant in claim 16. As a result, the teachings of Cass et al. anticipate the system of claim 16.

The following is in regard to Claim 18-20. As shown above, Cass et al. disclose a system of digital ink recognition that conforms to the system of claim 15. Following from the arguments presented above, with regard to claims 12 and 13, it should be clear that the digital ink recognition system of Cass et al. the uses curvature features comprising the discreet curvature of the stroke (Cass et al. Fig. 2 and column 4, lines 3-8) and a second histogram of the tangent angle ($\delta^2\theta_n$), which, as mentioned several times above, is analogous to the tangent histogram of the Applicant's description. Therefore, given the discussion above, the digital ink recognition system of Cass et al. sufficiently conforms to the systems proposed by the Applicant in claims 18-20. As a result, the teachings of Cass et al. anticipate the systems of claim 18-20.

Rejections Under 35 U.S.C. § 103(a)

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,304,674 by Cass et al. ("Cass").

Regarding claim 1, Cass discloses a computer readable medium (e.g. as shown in figure 1) having computer-executable instructions, comprising,

accessing a stroke sample representing a text class (figure 4, step 410: a first stroke pertaining to e.g. a text class is input for training);

extracting curvature features of the stroke (column 3/61 through column 4/8: an inputted stroke is resampled and curvature features are extracted therefrom -- see figure 2);

using the curvature features, training a trainable classifier to classify the stroke (figure 4, steps 415-420: the stroke is classified using a HMM classifier).

Figure 4 of Cass shows the procedure for training the system to recognize strokes pertaining to a single class, such as a letter or a shape (i.e. text or drawing). Before training, Cass specifies a gesture class to which the subsequent stroke belongs (step 405). Cass does not expressly disclose running the training procedure for multiple gesture classes -- e.g. training for a "letter class" and then training for a "shape class." However, such a feature is so easily inferred as to be implicit in Cass's disclosure. Cass's system is operative to recognize different classes (and subclasses) of gestures, so it is readily apparent to those skilled in the art that the training must be performed for each of those classes.

Therefore, Cass fairly suggests accessing stroke samples corresponding to both text and drawing classes, extracting features from those strokes, and then training a classifier to classify the strokes of the two different classes using the curvature features, as claimed.

Regarding claim 3, Cass discloses the features include a tangent histogram of the stroke (i.e. a "series of second derivatives of the tangents of the curve" -- see column 4/2-8).

Regarding claims 4 and 5, Cass discloses the features include the discreet curvature of the stroke (see figure 2 -- curvature features computed for discreet segments of the stroke).

12. Claims 2, 8-11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cass et al., in view of Burges.

The following is in regard to Claims 2 and 8. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 6. Cass et al., however, fail to show or suggest using a Support Vector Machine (SVM) as the trainable classifier.

Burgess discusses, at great length, support vector machines and their applicability to pattern recognition. Burgess points out the applicability of SVMs to handwriting recognition and classification (Burges, page 121, last paragraph).

The teachings of Burges and Cass et al. are combinable because they are analogous art. Specifically, Burges' teachings are directed toward the application of SVMs to pattern recognition, with handwriting recognition being one mentioned instance of an application. Cass et al. discuss the application of a trainable classification scheme (namely, HMMs) to handwritten digital ink. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to use an SVM, such as that which is described by Burges, in lieu of or in addition to HMMs, for the classification of strokes in the method of digital ink recognition proposed by Cass et al. One of the primary advantages of using SVMs over other methods is that SVM learning is independent of the dimensionality of the feature space. This, in turn, allows classification or recognition algorithms, employing SVMs, to accommodate very high dimensional feature vectors, without succumbing to substantial performance degradation (Burges, page 147, section 5.1, paragraph 1). On the other hand, combining an SVM with an HMM, such as that of Cass et al., would preserve the support for

high dimensionality provided by an SVM, while accounting for the temporal structure of the digital ink strokes using an HMM. Using an SVM, as just discussed, in the method of Cass et al. would produce a method that adequately satisfies the limitations of claim 8.

The following is in regard to Claim 9-11. As shown above, Cass et al. disclose a method of digital ink recognition that conforms to the method of claim 8. The bases for the rejections of claims 9-11 follow, respectively, from the discussions above with regard to claims 12-14, in conjunction with the discussion above relating to claim 8.

The following is in regard to Claim 17. As shown above, Cass et al. disclose a system of digital ink recognition that conforms to the system of claim 15. It should be clear from that discussion and the preceding discussion with regard to claim 8, that the teachings of Cass et al. and Burges can be combined to address the limitations of claim 17. For reasons that are analogous to those presented above with respect to claim 8, such a combination would have been obvious to one of ordinary skill in the art, at the time of the Applicant's claimed invention.

13. Claims 21-24, 26, and 29-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altman et al. (U.S. Patent 5,517,578) in view of U.S. Patent 6,304,674 by Cass et al. ("Cass").

The following is in regard to Claims 21 and 34. Altman et al. disclose a method/computer-readable medium having instruction for:

(21.a.) Accessing a digital ink file having a plurality of strokes therein. See, for example, Altman et al. column 3, lines 60-61 and column 5, lines 10-20.

Determining a class for each of the plurality of strokes (figure 2B: stroke

is classified as drawing or text).

(21.b.) Grouping some of the strokes based upon local characteristics of the strokes to formed grouped strokes. See Altman et al. Figs. 3 and, particularly, 4A-4B. Local characteristics used in the grouping include spatial characteristics of the strokes. See steps 75 and 79 of Altman et al. Fig. 4B.

Altman does not expressly disclose determining a class for each of the plurality of strokes "based upon an analysis of curvature features of the strokes." Altman teaches determining the class of the stroke as either "text" of "drawing" based on the location of the stroke, as shown in figure 2B. However, if the stroke is (1) not in a text region 50, (2) not in a drawing region 51, and (3) not longer than two lines 52, Altman performs "gesture recognition on the stroke" 53 to determine whether it falls in the "text" or "drawing" class. Altman's disclosure is not clear as to whether the "gesture recognition on the stroke" involves "an analysis of curvature features of the stroke."

Cass, however, discloses a stroke recognition system wherein curvature features, such as those shown in figure 2, are analyzed in order to determine the class of a stroke. Cass teaches that utilizing curvature features, such as the sine and cosine of the tangent angles for various segments of a stroke, in order to determine the class of the stroke was a conventional practice.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Altman by Cass to achieve the claimed invention by determining a class for each of the plurality of strokes "based upon an analysis of curvature features of the stroke," since Altman

discloses performing "gesture recognition on a stroke" to determine its class, and Cass teaches that gesture recognition to determine the stroke of a class is conventionally based upon an analysis of curvature features of a stroke, such as shown in figure 2 -- the advantages of employing an analysis of curvature features in conjunction which a trainable classifier to determine the class of a stroke would have been readily apparent to those skilled in the art at the time of the invention upon reading Cass's disclosure.

The following is in regard to Claim 22. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 21. As discussed above relative to step (21.b), local characteristics upon which the stroke grouping is based can include spatial characteristics of the strokes. Therefore, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method proposed by the Applicant in claim 22.

The following is in regard to Claim 23. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 22. In the method of Altman et al., the distance between strokes is compared against a threshold distance (e.g. 40/64 of a line height) when forming the *chained groups* (Altman et al. column 6, lines 53-57). See Altman et al. column 7, lines 6-10. This sufficiently addresses the limitations of claim 23. Note that a similar case can be made for the grouping discussed in Altman et al. column 11, lines 29-41. Therefore, the teachings of Altman et al. anticipate the method of claim 23.

The following is in regard to Claim 24. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 22. In the method

of Altman et al., the grouping of the strokes is also based on the relative heights of the strokes. See, for example, Altman et al. column 6, lines 2-15. Therefore, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method proposed by the Applicant in claim 24. In this way, the teachings of Altman et al. anticipate the method of claim 24.

The following is in regard to Claim 26. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 21. In the method of Altman et al., the grouping of the strokes is also based on the relative heights of the strokes. See, for example, Altman et al. column 6, lines 2-15. Therefore, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method proposed by the Applicant in claim 26. In this way, the teachings of Altman et al. anticipate the method of claim 26.

The following is in regard to Claim 29. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 21. Altman et al. further group strokes according to the characteristics of other strokes. For example, Altman et al. assume that if a stroke of a particular class (e.g. drawing or text) has already been drawn in a region, the strokes in that region are likely to be of the same class (Altman et al. column 5, lines 41-61). In this way, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method proposed by the Applicant in claim 29. Therefore, the teachings of Altman et al. anticipate the method of claim 29.

The following is in regard to Claims 30 and 35. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 29. Other

characteristics that determine the grouping of strokes, in Altman et al.'s method, include the height of a stroke. The method determines whether this height is within some normalized height (e.g. two line heights). Such strokes are considered writing strokes (Altman et al. column 5, lines 59-67 to column 6, lines 16). That is, the grouping of strokes is based upon a normalized height of at least some of the plurality of strokes. In addition, this grouping also involves weighting strokes "by multiplying the top coordinate of each stroke by 2, adding the bottom coordinate and then dividing the total by three [(2×top+bottom)/3]. All the strokes in the chained group are then associated with the line in which their average weighted vertical center lies" (Altman, et al. column 7, lines 17-30). That is, the height of the strokes is normalized during the chain grouping of Altman et al.'s method. In this either case, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method proposed by the Applicant in claim 30. Therefore, the teachings of Altman et al. anticipate the method of claim 30.

The following is in regard to Claims 31 and 36. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 29. The method of Altman et al. further includes:

(31.a.) Classifying some of the plurality of strokes as text strokes. See Altman et al. column 5, lines 41-61. Notice that method of Altman et al. makes the distinction between drawing strokes and writing (text) strokes. See Altman et al. Fig. 2A, step 44 and Fig. 2B, step 54.

(31.b.) Grouping some of the strokes based upon characteristics of the plurality of strokes comprises grouping some of the strokes based upon a normalized height of the text strokes. This was addressed above with respect to claim

30.

The following is in regard to Claims 32 and 37. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 29. Grouping according to the characteristics of other strokes is also done according to a *center point overlap method* (Altman et al. column 8, lines 23-25), which groups a current stroke with other strokes when the center point of the current stroke is within a threshold distance of the center points of other strokes (Altman et al. column 8, lines 39-44). In this way, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method 32. Therefore, the teachings of Altman et al. anticipate the method of claim 32.

The following is in regard to Claims 33 and 38. As shown above, Altman et al. disclose a method of grouping and manipulating digital ink that conforms to the method of claim 21. The method of Altman et al. further comprises:

(33.a.) Classifying some of the plurality of strokes as text strokes. See Altman et al. column 5, lines 41-61. Notice that method of Altman et al. makes the distinction between drawing strokes and writing (text) strokes. See Altman et al. Fig. 2A, step 44 and Fig. 2B, step 54.

(33.b.) Designating at least one of the stroke groups as a text stroke group based upon at least some of strokes in the stroke group being text. This was addressed previously with respect to claim 29. For example, strokes in a region already determined to contain writing (text) strokes are assumed to be text strokes (Altman et al. column 5, lines 41-61).

Therefore, Altman et al.'s method of grouping and manipulating digital ink sufficiently conforms to the method 33. The teachings of Altman et al. thus anticipate the method of claim 33.

14. Claims 25, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altman et al. (5,517,578), in view of U.S. Patent 6,304,674 by Cass et al. ("Cass"), and further in view of Altman et al. (U.S. Patent Application Publication 2002/0064308A1). In order to distinguish these references by name, these references will be referred to, henceforth, as Altman 1996 and Altman 2002, respectively.

The following is in regard to Claim 25. As shown above, Altman 1996 discusses a method of grouping and manipulating digital ink that conforms to the method of claim 24. Altman 1996, however, does not show grouping according to the local characteristics of the grouped strokes comprising grouping some of the strokes based upon a relative aspect ratio of the strokes.

Altman 2002 essentially proposes an extension of the method proposed in Altman 1996. In the method of Altman 2002, the grouping of certain strokes is based on local characteristics that include the relative aspect ratio of the strokes. See, Altman 2002 column 18, lines 14-24 of paragraph [0130].

The teachings Altman 1996 and Altman 2002 are clearly combinable, as they teach essentially the same underlying system and method of grouping and manipulating digital ink. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to use the relative aspect ratio to group certain strokes. According to Altman 2002 (Altman 2002, column 18, sentence 1 of paragraph [0129]), the motivation to do

so would have been to account for certain strokes, such as those corresponding to dashes and/or bullets, during the grouping of strokes. Incorporating this aspect of Altman 2002's method into the method of Altman 1996, would yield a method that conforms to that which is put forth by the Applicant in claim 25.

The following is in regard to Claims 27-28. Taking into account the previous discussion relating to claim 25 and the discussions above relating to claims 26 and 21, respectively, it should be clear that combining the teachings of Altman 2002 and Altman 1996, in the manner just described, results in a method that conforms substantially to that of claims 27 and 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu, can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Colin M. LaRose
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24 July 2006

VIKKRAM BALI
PRIMARY EXAMINER